SEDIMENTOLOGY OF THE UPPER PEGU GROUP IN THE AREA WEST OF MINBU

PhD DISSERTATION

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ABSTRACT

The study area, located in western Minbu area, mainly consists of the Tertiary mollassic clastic sedimentary rocks. The present research mainly deals with the sedimentology of Miocene clastic strata of the Upper Pegu Group. Stratigraphically, the Upper Pegu Group consists of the Pyawbwe Formation (Aquitanian), Kyaukkok Formation (Burdigalian) and Obogon Formation (Vindobonian) in ascending order.

The Pyawbwe Formation mainly consists of light gray to bluish gray shale with subordinate amount of yellowish brown sandstone. The Kyaukkok Formation is mainly composed of brownish gray to yellowish gray coloured, fine to coarse-grained, medium to thick bedded sandstones. The Obogon Formation mainly consists of alternating beds of fine to medium-grained, medium to thick bedded and buff to yellowish coloured sandstones and buff gray coloured shale.

Petrographically, the sandstones of Pyawbwe, Kyaukkok and Obogon formations are arkose, lithic arkose and feldspathic litharenite derived from transitional continental, basement uplift, recycled orogenic and dissected arc provenances. Diagenetic imprints such as quartz overgrowth, authigenic clay, effect of compaction, corrosion of detrital grains, algae coating, pyrite and glauconite, various calcite replacement, iron oxide cementation, and siderite are also observed. Most sediments show unimodal distribution. Sediments are fine-skewed to coarse-skewed and display platykurtic to mesokurtic nature. There is a prominent upward decreasing phenomena in mean values in some Obogon sands. The sands of Pyawbwe Formation and Kyaukkok Formation are poorly sorted to moderately sorted, while the Obogon sands are moderately to moderately well sorted. A C.M pattern of sediments of the study area indicates their accumulation by rolling and rolling with some suspension as well as graded suspension with some rolled sediments.

A least eight sedimentary facies in Pyawbwe Formation, such as (1) Thick bedded grey shale facies. (2) Shale with sand intercalation facies, (3)Fossiliferous sandstone facies,(4) sand-mud interlayer facies, (5) Lenticular bedded sandstone facies , (6) Mudstone facies (7) Swaly cross-stratified sandstone facies (8) Gypsiferous shale facies were noted in the Pyawbwe Formation. In the Kyaukkok Formation at least seven lithofacies such as (1) Lenticular bedded facies, (2) Cross-bedded sandstones with mud clastsfaceies, (3) Corss-bedded sandstone facies, (4) Laminated sandstone facies, (5) Sandstones with shale intercalation facies,

(6)Sandstones with mud drapes facies, and (7) Sand-mud inter layer facies have been identified. The Obogon Formation has six sedimentary facies; namely (1) Massive sandstone with shale intercalation facies, (2)Sand-mud interlayer facies, (3) Trough-cross bedded with mud drape facies, (4) Mud clast bearing sandstone facies (5) Sandstone with mud nodules facies and (6) Alternation of sandstone and shale facies. In the present study area, at least four lithofacies associations can be encountered. They are: (1) Offshore / prodelta facies association, (2) Subtial faceis association, (3) Delta front and (4) Delta plain facies/intertidal facies association. The depositional environments are shallow marine, deltaic and tidal marine. The sedimentary evolution of the study area during Miocene time started with and episode of marine transgression which was followed by the regressive condition and, then recurrence of a transgressive event took place.

Industrial raw materials like gypsum, efflorescent salts, and to lesser extent are present. Hard and compact sandstones are mainly used as the construction material. Hydrocarbon(crude oil) is extracted from the local hand-dug wells.

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